

Conference Summary

Third GAIN World Conference

November 3-5, 1998

Long Beach, California

Tuesday, November 3, 1998 (Day One)

1:00 p.m. Conference Welcome

Capt. Edmond L. Soliday, Vice President, Corporate Safety, Quality Assurance & Security, United Airlines

Captain Soliday welcomed the participants and said that he supported the conference because GAIN is needed to make existing information exchange more efficient and to increase analytical capabilities. He believes GAIN will not involve regulators looking at data because the best analyst of safety data is the person working most closely with the issue. However, GAIN is needed to develop regulations based on hard information, not the latest public opinion poll. Soliday said United believes GAIN will be created in one form or another and the airlines can either help develop GAIN or be pushed into it.

1:20 p.m. "What's to GAIN"

Mr. Christopher A. Hart, Assistant Administrator for System Safety, Federal Aviation Administration

Mr. Hart provided an overview of the GAIN concept. He said GAIN is needed to help drive down the accident rate below current levels by collecting and analyzing the valuable information on unreported occurrences and even normal operations that is currently lost from the system. He said we must share information to fix root causes and eliminate large groups of accident scenarios. Mr. Hart said that we are finding solutions to legal obstacles and now must attack a bigger hurdle, the need for improved analytical tools. He said that GAIN will be a network of systems, an infrastructure, not a massive database. GAIN will be completely voluntary, with data owners maintaining sole and complete control over their data.

2:00 p.m. How Your "Bottom Line" Can Benefit from Collecting and Analyzing Technical & Operational Safety Information

Moderator - Dr. Steven C. Predmore, Manager Safety Performance and Quality Assurance, Corporate Safety and Compliance, Delta Airlines

Dr. Predmore introduced the first session of the conference, which featured airline representatives sharing success stories about the value of collecting and analyzing information within their organization. Dr. Predmore said, "Data is worthless. Analysis of that data to create useful information is what is valuable."

Mr. Tim Logan, Director, Flight Safety & Quality Assurance, Northwest Airlines

Mr. Logan spoke on the benefits of operational safety information. He said that a safety program will probably not show an internal rate of return (IRR) to the finance people, but can be justified through risk reduction, in which high risk areas are identified and corrected. He said that improvements in efficiency are often a valuable side-benefit of safety programs. Mr. Logan listed a number of areas in which Northwest has benefited from the reporting and analysis of safety information. He recommended that GAIN should involve small, focused databases that are close to the source operations and have better quality control than a massive, general database of many event types. He also suggested that GAIN could promote an environment for sharing safety information.

Capt. Roger Doguet, Flight Safety Manager, Air France

Captain Doguet presented a paper on “Implementing a Multi-Channel Feedback System.” He explained how Air France has developed a variety of tools, referred to as “feedback channels,” to gather and analyze safety information. These channels include crew air safety reports, digital flight data analysis, a confidential reporting system, and periodic surveys of flight crews. Captain Doguet explained that he does not attempt to justify safety programs based on the value of x number of 747s saved in a year, but can show his boss that he addressed certain risk areas.

Mr. Louis Mancini, Vice President, Engineering & Technical Support, United Airlines

Mr. Mancini stated that airlines compete for customers, but cooperate on safety. He said that cooperation is common in the maintenance arena, as he has daily meetings that are open to representatives of the FAA, engine manufacturers, and Boeing/Airbus. They also report delays and reliability information to the appropriate manufacturer representatives. Mr. Mancini sees GAIN as a system of peer-to-peer interactions that builds upon existing avenues of data exchange. He is looking for improved standardization of information such as a common data structure for reliability information.

Mr. Ian Dobson, Design Department, Bristow Helicopters, Ltd, with Mr. Dave Jesse, Chief System Engineer, Marconi DSG

Mr. Dobson and Mr. Jesse spoke about the Health Usage Monitoring System (HUMS) implemented at Bristow Helicopters and other North Sea helicopter operations. HUMS has three elements—exceedance, vibration, and FDR—that have alerting mechanisms as well as recording information about operational parameters for analysis. System paybacks include capabilities for detecting system deterioration and the ability to determine the duration and severity of an exceedance to select appropriate levels of response (e.g., future monitoring, inspection, or immediate system replacement).

Capt. Terry Clark, Director, Flight Safety, Alaska Airlines

Captain Clark presented “Just a Few Anticipated Cost Benefits of FOQA.” He showed a series of theoretical calculations that demonstrated how a Flight Operations Quality Assurance program could save money for an airline by reducing or eliminating various safety concerns and improve operational parameters. Areas examined by Capt. Clark included training costs (reduction in training frequency based on recorded pilot performance), understanding causes of engine over-temperature events, reduced brake wear via improved piloting techniques, improved fuel burn, and other areas. In total, Capt. Clark estimates that Alaska Airlines saves \$5,000,000 annually from its FOQA program.

Capt. K. Scott Griffith, Managing Director, Flight Operations Safety, American Airlines

Captain Griffith shared information on American Airlines Safety Action Partnership (ASAP), a program to collect and analyze voluntarily provided flight safety data provided by individual line employees. To improve safety information exchange, Capt. Griffith recommended that Public Law 103-272 (governing FAA legal enforcement policy) be reviewed and amended as necessary to protect the information voluntarily collected under ASAP and FOQA programs from use in enforcement actions by FAA. He feels that quality information is not being collected within airlines because permanent, full protection for collecting this information is being held up in the US government.

4:15 p.m. Moderated discussion with question & answer period

A lively question-and-answer session followed the presentations. Selected questions and the answers offered are presented here.

Question A: How can we convince managers to invest in long-term solutions that may be on a 3- or 4-year track?

Answer A.1: Start small at the lower levels in the organization using available resources. Bring management along when the program is showing dividends.

Answer A.2: Use marketing and legal departments as your allies. They understand the potential costs of an accident and risk management concepts.

Answer A.3: Pursue quality assurance, not cost savings. Quality usually is accompanied by safety.

Question B: Could safety information be given to NTSB, which has protections from civil litigation? What about stamping all GAIN information “privileged and confidential”?

Answer B.1: Too many other groups need safety information to keep it locked up at NTSB, including FAA headquarters for writing good regulations based on fact and data, and Principal Operations Inspectors (POIs). Also, “privileged and confidential” protections work only on information not seen by a lot of people, and we need safety information to be widely distributed.

Answer B.2: GAIN should be privately owned and operated because airlines can operate it efficiently for their own financial gain.

Question C: A New Zealand CAA database based on a Jim Reason Human Factors model shows that pilot-caused problems are not that common. However, we’ve heard that up to 90% of accidents involve pilot error. What does the panel think?

Answer C.1: Task overload, automation issues, and other complicating factors influence errors. The important issue is not who or what was at fault but why the event occurred and how can it be corrected. We need greater understanding of why a pilot didn’t follow the SOP, what was his mental state, etc.

Question D: We feel we need full immunity to encourage free reporting of safety concerns. What do you think?

Answer D.1: Actually, we need a non-punitive, corrective action-based approach from the regulators, but not immunity.

Answer D.2: Having an anonymous reporting option can encourage participation in a system, but the inability to follow-up on an issue decreases the value of an anonymous report.

Wednesday, November 4, 1998 (Day Two)

8:30 a.m. Solutions to Sharing - Overcoming the Barriers

Moderator - Mr. Jerald M. Davis, Flight Safety Specialist, Foxfire of Daytona Beach, Inc.

Mr. Davis introduced the second session of the conference, which addressed solutions successfully used to overcome various barriers (trust, standardization, legal issues, data security, etc.) and permit information collection and analysis programs to move forward.

A Successful Approach to Protecting Aviation Safety Information in the Military

Lt. Michael J. Jaeger, JAGC, US Navy

Lt. Jaeger explained how information from accident investigations is protected in the U.S. military under Executive Privilege and the Promise of Confidentiality automatically given to investigation board members, technical experts, and witnesses. Non-privileged information can be released, including facts, engineering reports, CVR transcripts, and ATC tapes. Privileged information, such as deliberations, opinions, recommendations, and witness testimony, is withheld unless privilege is waived by the Secretary of the Navy. Lt. Jaeger suggested that the best way to secure any protection is through legislation, as courts can change their thinking.

Freedom and an Open Society - Roadblocks to Improving Safety

Mr. Stuart Matthews, President and CEO, Flight Safety Foundation

Mr. Matthews argued that a pro-active approach to safety will be needed to reduce the fatal accident rate by 80%, as directed by the White House. He said that while FOQA programs should be a part of this pro-active approach, the punitive culture in the US that desires to assign blame for errors hinders the establishment of FOQA programs. Mr. Matthews also pointed out that the Freedom of Information Act and discovery in civil trials are “bastions of democracy and a free society” but provide roadblocks to collecting information to improve aviation safety. Mr. Matthews argued that the best way to make FOQA work in the US is to change the law, but admitted that this is also the most difficult approach to implement. He feels that US law should protect information voluntarily provided to improve safety.

ICAO Annex 13 as a Legal Solution

Capt. Paul McCarthy, Chairman, Accident Analysis Committee, International Federation of Air Line Pilots Associations

Capt. McCarthy spoke of the value of FOQA and ASAP programs but also said that pilots must believe in the integrity of the confidential, non-punitive nature of these reports. IFALPA would like to see information from accident prevention programs like FOQA and ASAP (covered under Chapter 7 of ICAO Annex 13) to be protected the way that accident investigation information is protected (under Chapter 5). IFALPA has proposed new language for Chapter 5 to give protection to various types of safety and other information that will allow that information to continue to be collected while preventing its misuse.

Airbus Views and Current Activities on Data Sharing

Mr. Yves Benoist, Director of Flight Safety, Airbus Industrie

Mr. Benoist stated that Airbus would like to increase its knowledge of operational issues to drive down the accident rate as operations tend to be the leading cause of accidents and has the largest number of prevention strategies. Airbus has several programs to acquire this information including human factors reporting, continuous monitoring of flight data (called LOMS), a confidential reporting program that pools data from 62 Airbus operators, safety conferences, and safety publications. Now, Mr. Benoist would like to see increased sharing of lessons learned throughout the aviation community and increased levels of protection to the people, organizations, and data involved in these safety programs. He believes that GAIN, if implemented correctly and at a measured pace, can be an umbrella organization that coordinates sharing and protects the participants from competitive, legal, and media hazards.

Defining the Regulator's Role

Mr. Nicholas Garaufis, Chief Counsel, Federal Aviation Administration

Mr. Garaufis explained that his office is responsible for finding the means to accomplish the FAA's goals under the laws set by Congress. He said we cannot ignore the interests of several affected parties when considering the protection of safety information, including the media, tort lawyers, and victims' families. While FAA is committed to FOQA and reducing the fatal accident rate 80%, existing statutes require FAA to take remedial measures, if necessary, to prevent an accident. While FAA can waive, in advance, any punitive enforcement action based on information collected under FOQA programs, FAA is required to retain the capability for remedial enforcement such as revocation of certificate. Mr. Garaufis said that the Counsel's Office will not act as an advocate for change in the law. He said that while the office fully supports the use and protection of safety data, it can only interpret the FAA's responsibility under existing laws.

ATA Aviation Safety Exchange System (AASES)

Mr. Bill Bozin, Senior Director, Safety, Air Transport Association of America

Mr. Bozin described AASES, a system under development to systematize and standardize the safety information exchange that ATA members have conducted for many years. AASES utilizes limited de-identification. "No one wants the pilot's name or the date of the event," Mr. Bozin said, explaining that certain other information such as event location is often needed to maximize the usefulness of the report. Mr. Bozin acknowledged that standardization is a difficult issue, as various airlines have different cultures and unique needs. Members are not required to change their own systems, but only standardize the material that is extracted and merged into AASES. Mr. Bozin said that sharing aviation safety information presents potential liabilities, but these are far outweighed by potential benefits.

Commercial Aviation Safety Team (CAST) - Bringing Industry & Government Together

Mr. H. Keith Hagy, Manager, Engineering & Accident Investigation Section, Air Line Pilots Association

Mr. Hagy spoke of the need for the aviation community to identify root causes and address the "high payoff" accident prevention areas; to work together to maximize its efforts under limited resources and avoid pursuing competing safety agendas; and to work on proactive, not reactive, efforts. He explained that CAST is an industry-government partnership to use a data-driven approach for identifying issues and developing an integrated safety strategy. CAST has two sub-groups. The Joint Safety Analysis Teams (JSATs) are looking at accident and incident data to identify intervention strategies. The Joint Safety Implementation Teams (JSITs) are just beginning to develop and coordinate programs to implement the "high payoff" intervention strategies identified. The JSITs should be very effective because they are made up of "Decision Making" representatives from the stakeholders affected by the intervention strategies or those responsible for implementation of those strategies.

Information Sharing Proof-of-Concept, GAIN Working Group 1

Capt. Tom Croke, Air Safety Officer, Aer Lingus

Capt. Croke described GAIN WG1's progress over eight meetings since the London conference. He said the group, which consists of 22 aviation organizations from industry and government throughout the world, started out sharing safety information on a selected group of safety issues. It then decided it would be more fruitful to the GAIN process to change its focus from safety analysis to facilitation of safety information sharing. The group created an Interactive Airline Safety Information Sharing Library containing over 100 articles on safety incidents from safety magazines published by airlines and other aviation organizations. Capt. Croke invited airline representatives to attend a demonstration of the library while they were at the Conference. Capt. Croke also reported that WG1's "lessons learned" for GAIN are that sharing aviation safety information is possible only by protecting the information, ensuring proper use of the information, having sharing systems work together, and showing safety improvement as a result of the sharing. Capt. Croke then proposed a conceptual sharing system architecture that would allow airline flight safety managers to electronically access safety incident reports from databases maintained by other safety managers that they presently contact by telephone to discuss. He proposed that WG1 pursue the development of such an architecture. Capt. Croke concluded that trust at the personal level is a prerequisite to enable sharing of safety information and that GAIN will enable airline safety reporting systems to share information by providing an infrastructure and maintaining operating standards.

Aviation Safety Information Exchange System

Mr. Toro Domoto, General Manager, Engineering Department, Association of Air Transport Engineering and Research (ATEC)

Mr. Domoto described the Aviation Safety Information Exchange System being developed in Japan by a committee of representatives from three airlines, pilot associations, government organizations, and research groups like ATEC. The group's objectives are to create an information exchange system for sharing aviation safety information, make proactive use of the data to improve aviation safety, and make proposals for remedial measures, as required. The group is considering various data inputs

including government accident and incident data; air carrier data including voluntary safety reports, captain reports, and voluntary disclosure reports; and other data such as ICAO ADREP and ASRS reports. Operation of an initial system is expected by October 1999 with client PCs in the offices of each participating organization.

11:40 a.m. Moderated discussion with question & answer period

Selected questions and the answers offered during this Q&A session are presented here.

Question A: Would the FAA support the airlines in going to Congress to try to change the laws [governing enforcement of FAA safety regulations and protection of voluntarily provided safety information]?

Answer A (from Nick Garaufis, FAA Chief Counsel): My office does not make policy. The decision to pursue a legislative agenda would have to be made by the FAA Administrator, the DOT Secretary, or the White House.

Question B: Who will receive the data from GAIN? We need to get the information from GAIN into the heads of pilots, maintainers, managers, and other key positions.

Answer B.1: Information must be analyzed locally, where it originates. It may mean different things in different regions or in different airlines.

Answer B.2: The key to safety analysis is that effective corrective measures are taken as a result. These measures originate at the airline flight operations or maintenance/technical departments.

12:00 p.m. Luncheon: Remarks by the Honorable Jane F. Garvey, Administrator, Federal Aviation Administration

Sponsored by AlliedSignal Electronic & Avionics Systems

Administrator Garvey said that aviation accidents today tend to involve interactions between complex systems; advanced tools and international partnerships are needed to address those complexities. Preparing a safety agenda to focus on the issues with the highest payback is necessary to leverage resources. She said that proactive accident prevention is needed and reflects an important shift for the FAA and industry. Administrator Garvey sees the FAA's National Aviation Safety Data Analysis Center (NASDAC), Flight Operations Quality Assurance (FOQA) programs, and Aviation Safety Action Partnership (ASAP) programs as key safety tools. She said that the draft FOQA rule is still being studied to ensure that it does not compromise the success of the pilot FOQA programs. An internal policy on FOQA will be issued within a month, she said, to cover the pilot programs until a final rule can be approved.

1:30 p.m. Aviation Analysis Tools and Methods

Moderator - Dr. Clay Foushee, Vice President, Regulatory Affairs, Northwest Airlines

Dr. Foushee introduced the third session of the conference, which involved presentations on various analytical tools and methods for aviation safety and operational data. Many speakers addressed ways that using analysis tools and methods can benefit an organization in terms of economic and/or safety improvements.

Safety Analysis at United Airlines

Capt. Edmond L. Soliday, Vice President, Corporate Safety, Quality Assurance & Security, United Airlines

Capt. Soliday said that United's safety programs are designed to look beyond past accidents and incidents to identify new safety concerns that could lead to new types of accidents. He views the fundamental principals of safety are (1) to find the truth and (2) to facilitate change by involving all stakeholders. United uses multiple systems to gather safety information including internal audits,

government audits, accident & incident inquiries, the FOQA program, an employee safety reporting system, and maintenance and engineering report systems. Capt. Soliday said that analysis must be done by those close to the operation; while mathematicians are needed, the analysis must involve the affected parties and not be done in an “ivory tower.” He said that most safety analysis is labor intensive and the industry could really benefit from improved analysis tools that automate and simplify the process.

Health Usage Monitoring System (HUMS)

Mr. Brian Larder, Stewart Hughes, Ltd.

Mr. Larder presented a briefing on the Helicopter Health and Usage Monitoring System (HUMS), saying that the program represents a major advancement in helicopter maintenance monitoring technology. He said HUMS has shown safety and maintenance benefits, but, like GAIN, also has various obstacles to overcome. HUMS can monitor various functions including rotor track and balance, engine health, drive train health, usage, and flight data recording. He said the program’s benefits has led to simplified RTB operations, reduction in airframe vibration levels, and prevention of unnecessary component rejections following incidents. Mr. Larder said that HUMS could be more effective with greater information exchange between organizations: suppliers need feedback to develop diagnostics, operators need effective maintenance procedures, constructors need an understanding to develop these maintenance procedures, and regulators need confidence in HUMS to award safety and maintenance credits.

Aircrew Incident Reporting System (AIRS)

Mr. Matthias Schmidlin, Group Manager, Operational Monitoring & Incident Reporting, Airbus Industrie

Mr. Schmidlin described AIRS, a voluntary confidential human factor reporting system established by Airbus for airline operators to better understand the man-machine events that occur within their operations. AIRS human factor questionnaires are used to guide flight crews through self-analysis and documentation of events. A software package allows the participating airline to store event reports in a standardized way, analyze the raw data, identify trends, and create reports. In establishing the program certain impediments had to be addressed. Confidentiality was addressed by limiting access to the system and providing sufficient de-identification. Availability of hardware and software were addressed by Airbus providing to participating airlines at no charge all necessary tools to store, update, and analyze the information. Finally, legal concerns were addressed through well-crafted data provision agreements. Program benefits include quick identification of intervention points (procedures, training, design) to correct active and latent failures.

Identifying Key Risk Areas for UK Aviation

Mr. Adrian Sayce, Head, Safety Analysis, UK Civil Aviation Authority

Mr. Sayce identified key risk areas for UK aviation and described how the Safety Regulation Group (SRG) developed a process to address these safety issues. A sub-group of the SRG identified the top ten issues by taking into account frequently occurring causal factors, circumstantial factors, and consequences (or outcomes of accidents). Some of the risks identified were as follows: crew and human factors, regulatory oversight, occupant survivability, and failure to adopt/fit best available technology. Mr. Sayce said that the risk identification process could pertain to GAIN because the process is a matter of the quantity and quality of safety data and the type of safety analysis required. For instance, the process deals with the boundaries on the data set, depths of the data set, quality and quantity of the data, time frame for collecting data, the type of analysis (“top-down” or “bottom-up”) resources available, and the risks involved.

Maintenance Error Decision Aid (MEDA)

Mr. Bill Ashworth, Vice President, B.F. Goodrich Aerospace, Maintenance, Repair and Overhaul

Group, Inc.

Mr. Ashworth described a human factors program designed to manage errors at a third-party repair station. MEDA is an analysis tool to help understand root causes of errors. The program is based on work force involvement, as they know how to correct problems better than anyone else does. Structured investigations help provide repeatable data to permit analysis of trends. A feedback loop that measures effectiveness is also key to the program's success.

Aviation Performance Measuring System (APMS)

Dr. Irving C. Statler, APMS Project Manager, NASA Ames Research Center

Dr. Statler discussed the Aviation Performance Measuring System (APMS) program developed by NASA and how this program could relate to certain characteristics within GAIN. The objective of the APMS project is to demonstrate how large quantities of flight data can be continuously monitored, processed efficiently, and converted into useful information. APMS assesses precursors found within normal operations and/or incidents in order to identify potential adverse consequences. Elements of the APMS program include a common taxonomy for classifying data, a methodology to link databases, data mining, causal analysis of incidents, statistical patterns, trends, and risk assessments. The APMS is a cooperative effort between public corporations (airlines) and government entities/agencies (FAA/NASA).

Computer-Assisted Debriefing System (CADS)

Capt. Jansen Buckner, Commander, Sea Control Wing, Pacific, US Navy

Capt. Buckner briefed the participants on CADS, a system that records crew behavior, cockpit instrumentation, and audio on the flight deck. Data is then stored in a central processing unit, which can be replayed immediately for training validation and performance feedback for flight crews. These video recordings capture certain flight/navigation/engine instruments, control positions, tactical displays, in-flight tracking of flight data, and other selected viewpoints. Some of the applications currently used by CADS are crew self-critique and trend analysis. The next stage for CADS is to identify what types of data are most meaningful to managers, improve standardization and the ability to code and analyze qualitative and quantitative data to validate these training strategies in order to enhance safety.

A Multi-Layer Model for Incident Reporting and Analysis Systems

Mr. Jean Paries, Dédale Company

Mr. Paries presented a multi-layered methodology for analyzing operational incidents and using this analysis as an incident reporting system. With basic, existing concepts and a field study using AIRS (developed by Airbus), certain "lessons learned" were established and then prioritized according to risk, credibility and proactivity. Mr. Paries said that GAIN could benefit from such models because a multi-layered protocol was established to ensure that relevant information is sent to participating organizations in a timely manner, confidentiality and a feedback system are present, prioritization strategies exist, and keywords and safety principles had a common criteria.

Development and Application of Sequences as an Analytical Tool for Aviation Incidents

Mr. Gary T. Mays, Section Head, Operational Performance Technology, Oak Ridge National Laboratory

Mr. Mays presented a briefing on the development and application of sequence precursors as an analytical tool for aviation accidents. Mr. Mays discussed the key links for addressing GAIN safety goals by using structured analyses to identify safety issues. In order to implement these safety issues, ORNL reduced the narrative text within event reports to encoded, searchable sequences; accommodated both personnel errors and component/system failures; developed consistent encoding conventions; and expanded intuitive interfaces for users to access. Mr. Mays showed how the

development of sequences occurs using an incident matrix. For example, rows of the matrix show individual equipment failure or personnel errors, while data contained within the columns of the matrix show a sequential relationship. This helps an analyst evaluate how events that happened before or after a mishap may have contributed to the mishap.

Thursday, November 5, 1998 (Day Three)

8:45 a.m. “Advancing Your Safety Program”

This session featured a panel of speakers from the previous two days, but was primarily more of an open discussion among all conference participants. Some of the interesting points made during the discussion included the following:

- The insurance industry views GAIN as very positive and would like to see all airlines participate in GAIN. While the accident rate may be low compared to historical levels, 1998 has been the second most expensive year on record for insurance claims, so a reduction in accident frequency is really needed.
- Airlines should not hesitate to start safety programs. It may be scary, but they’ll learn a lot about their operation and will quickly be able to harvest that “low-hanging fruit.”
- Confidential reporting programs, especially those geared toward human factors issues, can be very helpful. Airline presidents will probably become very interested in such programs when they realize that a major accident can cost the airline \$440 million. Insurance people will say that the safety culture at an airline will impact its insurance rates. One indicator of a good safety culture is a good event-reporting program.
- The key to starting a successful event-reporting program is planning. Plan who will do what. Plan procedures. Plan tools. Be ready for that first report that comes in. Also, be patient. Involved parties must see benefits themselves to participate.
- The non-punitive nature of safety reporting programs in several countries outside the US is not assured by legal agreement. Instead, these programs are built on trust between pilots and management and mutual understanding of the benefits of these programs.
- Rather than starting new safety programs from scratch, the industry must learn current practices from the “best of the best.” Documenting these practices would benefit the industry.
- A safety program “tool kit” would be very helpful to small or start-up carriers. Similar to the CFIT package from Flight Safety Foundation, the tool kit could contain forms, taxonomies, software, checklists of things to do, etc.
- Interpersonal skills are important to selling safety programs to the workforce. All the tools in the world will not help if the workers are not convinced of the value of their event reports.

10:20 a.m. “How Do We Best Move Forward With GAIN?” *a roundtable working session*

[Summary information on this session can be found in a separate document “Summary of Day Three Collaborative Session.”]

11:15p.m. Luncheon: Remarks by the Honorable Robert T. Francis II, Vice Chairman, National Transportation Safety Board

Mr. Francis presented a series of thoughts on aviation safety. His primary messages were “Educate. Lead. Be Creative. Cooperate.” He said that there is risk in pursuing GAIN but that we cannot expect zero risk and must move forward in this worthwhile endeavor. He said that educating the media on safety issues is very important and that the aviation community can use the media to its advantage in getting the proper messages across to the public. Finally, he said that safety information must not be misused, for example, by ranking airlines. Not only are many accidents today “random” and not the fault of the involved airline, but that ranking groups by number of safety reports will dry up the flow of this important information.

1:00 p.m. “How Do We Best Move Forward With GAIN?” *(continued)*

[Summary information on this session can be found in a separate document “Summary of Day Three Collaborative Session.”]

5:00 p.m. ***Conference Adjournment***